

Appl. No. 10/089,972  
Reply to Office Action of November 20, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A cleaning method for cleaning removing fine particles remaining adhered to at least part of an ultrapure water supply system due to electrostatic attractive force, the ultrapure water supply system having an ultrapure water production apparatus connected to a point of use of ultrapure water via a passage, comprising the steps of:

(a) changing surface potential of fine particles remaining adhered to ~~present in~~ the at least part of the ultrapure water supply system into the same polarity as that of component parts constituting elements of the ultrapure water supply system by changing the surface potential of the fine particles from positive to negative, thereby eliminating the electrostatic attractive force between the fine particles and the at least part of the ultrapure water supply system or producing repulsive electrostatic force between them; and

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(b) discharging the negatively charged fine particles, which are removed from the at least part of the ultrapure water supply system by elimination of the electrostatic attractive force or production of the repulsive electrostatic force, to the outside of the ultrapure water supply system, together with cleaning liquid or ultrapure water for rinsing, wherein the cleaning liquid or ultrapure water for rinsing containing the negatively charged fine particles bypasses an element of the ultrapure water supply system, the element serving to remove the negatively charged fine particles in the ultrapure water supply system.

2. (Previously Presented) The cleaning method according to claim 1, wherein in said step (a), the surface potential of the fine particles is changed by bringing the fine particles into contact with a basic solution or a solution of surfactant.

3. (Canceled).

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4. (Currently Amended) The cleaning method according to claim [[3]] 2, wherein in said step (a), the basic solution or the solution of surfactant is caused to flow through the at least part of the ultrapure water supply system at a flow velocity of 0.5 m/sec to 2.0 m/sec.

5. (Currently Amended) A cleaning method for cleaning at least part of an ultrapure water supply system having an ultrapure water production apparatus connected to a point of use of ultrapure water via a passage, comprising the steps of:

(a) changing surface potential of fine particles present in the at least part of the ultrapure water supply system into the same polarity as that of component parts constituting elements of the ultrapure water supply system by changing the surface potential of the fine particles from positive to negative by bringing the fine particles into contact with a basic solution or a solution of surfactant; and

(b) discharging the fine particles from the at least part of the ultrapure water supply system to the outside of the ultrapure water supply system, together with cleaning liquid or ultrapure water for rinsing;

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wherein, in step (a)

~~The cleaning method according to claim 3, wherein in said step (a),~~ physical force is applied to the fine particles by keeping the basic solution or the solution of surfactant in contact with the at least part of the ultrapure water supply system, while applying small-amplitude vibrations with ultrasonic waves.

6. (Previously Presented) The cleaning method according to claim 2, wherein the basic solution is an aqueous solution of ammonia or ammonium salt, or an aqueous solution of alkali metal hydroxide, or a mixture of the aqueous solution of ammonia or ammonium salt and the aqueous solution of alkali metal hydroxide.

7. (Previously Presented) The cleaning method according to claim 2, wherein the basic solution is pure water or ultrapure water in which alkaline gas is dissolved.

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8. (Previously Presented) The cleaning method according to claim 4, wherein the basic solution is an aqueous solution of ammonia or ammonium salt, or an aqueous solution of alkali metal hydroxide, or a mixture of the aqueous solution of ammonia or ammonium salt and the aqueous solution of alkali metal hydroxide.

9. (Previously Presented) The cleaning method according to claim 5, wherein the basic solution is an aqueous solution of ammonia or ammonium salt, or an aqueous solution of alkali metal hydroxide, or a mixture of the aqueous solution of ammonia or ammonium salt and the aqueous solution of alkali metal hydroxide.

10. (Previously Presented) The cleaning method according to claim 4, wherein the basic solution is pure water or ultrapure water in which alkaline gas is dissolved.

11. (Previously Presented) The cleaning method according to claim 5, wherein the basic solution is pure water or ultrapure water in which alkaline gas is dissolved.